

WHAT IS CLAIMED IS:

1. A prosthetic valve for implantation within a fluid conducting lumen within a body, comprising:

an elongate radially-collapsible generally cylindrical body scaffold defining an elongate fluid passageway therethrough; and

a radially-collapsible leaf valve portion supported by said scaffold and being deflectable between a closed configuration restricting fluid flow through said passageway and an open configuration permitting fluid flow through said passageway, said leaf valve portion having an open-construction frame and a fluid impermeable lining sealing said frame.

2. The prosthetic valve of claim 1, wherein said lining is non-thrombogenic.

3. The prosthetic valve of claim 1, wherein said lining comprises a material selected from the group consisting of polyethylene, pellethane, urethane, bovine pericardial tissue, polyethylene terephthalate, polyester, silk, rayon, polytetrafluoroethylene and expanded polytetrafluoroethylene.

4. The prosthetic valve of claim 1, wherein said frame is formed from a metal.

5. The prosthetic valve of claim 1, wherein said leaf valve portion is flexibly supported for movement between said closed and open configurations.

6. The prosthetic valve of claim 5, wherein said leaf valve portion is normally spring biased towards said closed configuration.
7. The prosthetic valve of claim 5, wherein said leaf valve portion is normally spring biased towards said open configuration.
8. The prosthetic valve of claim 1, wherein said leaf valve portion includes a plurality of valve leafs deflectably supported in registry with said passageway between said closed and open configurations.
9. The prosthetic valve of claim 8, wherein each of said valve leafs is deflectably supported by said scaffold at a flexible hinge, whereby said open and closed configurations of said valve are defined downstream of said flexible hinges.
10. The prosthetic valve of claim 9, wherein said leaf valve portion includes three valve leafs deflectably supported in registry with said passageway.
11. The prosthetic valve of claim 9, wherein said leaf valve portion includes six valve leafs deflectably supported in registry with said passageway.

12. The prosthetic valve of claim 8, wherein said leaf valve portion includes first and second valve leafs and diametrically-opposed first and second hinge hubs, said first and second hinge hubs being downstream of said first and second valve leafs from said body scaffold.
13. The prosthetic valve of claim 12, wherein said first and second valve leafs each include an arcuate leaf edge extending between said first and second hinge hubs, wherein said arcuate leaf edges of said first and second valve leafs define a closable valve opening therebetween.
14. The prosthetic valve of claim 8, wherein each of said valve leafs includes first and second opposed major surfaces, said lining being positioned on one of said first and second major surfaces.
15. The prosthetic valve of claim 14, wherein each of said valve leafs is arcuately-formed to provide a convex shape to said second major surface of each of said valve leafs.
16. The prosthetic valve of claim 1, wherein said scaffold includes a first end defining a first opening, and a second end defining a second opening, and wherein said scaffold includes a substantially cylindrical interior face and a substantially cylindrical exterior face, and defining at least one radially-extending scaffold opening communicating between said interior and exterior faces.

17. The prosthetic valve of claim 16, further comprising an elongate generally cylindrical first biocompatible non-thrombogenic liner supported by said scaffold.
18. The prosthetic valve of claim 17, wherein said first liner is positioned on said interior face of said scaffold.
19. The prosthetic valve of claim 17, wherein said first liner is positioned on said exterior face of said scaffold.
20. The prosthetic valve of claim 17, wherein said valve leaf cover is contiguously formed with said first liner.
21. The prosthetic valve of claim 17, further including a second biocompatible non-thrombogenic liner positioned on said scaffold opposite said first liner.
22. The prosthetic valve of claim 21, wherein said first and second liners are contiguous across said first end of said scaffold.
23. The prosthetic valve of claim 21, wherein said first and second liners are affixed to each other through said at least one scaffold opening.

24. The prosthetic valve of claim 1, wherein said scaffold and said leaf valve portion are expandable from a first diameter permitting delivery of said prosthetic valve through said fluid conduit to a second radially-expanded diameter for retentively engaging said fluid conduit.

25. The prosthetic valve of claim 24, wherein said scaffold is radially self-expanding.

26. The prosthetic valve of claim 1, wherein said frame and said scaffold are formed as a unitary support trellis.

27. The prosthetic valve of claim 26, wherein said trellis is formed by a single undulating wire.

28. The prosthetic valve of claim 8, wherein each said valve leaf includes elongate first and second edges, said first and second edges of each valve leaf being positionable in abutting fluid-tight engagement with one of said first and second edges of an adjacent valve leaf to define said closed configuration of said leaf valve portion.